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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,188	12/27/2000	Tadayoshi Iijima	P107424-00019	2973

23353 7590 04/16/2002

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EXAMINER	
UHLIR, NIKOLAS J	
ART UNIT	**PAPER NUMBER**
1773	10

DATE MAILED: 04/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

A9-10

Office Action Summary	Application No.	Applicant(s)	
	09/748,188	IIJIMA, TADAYOSHI	
	Examiner	Art Unit	
	Nikolas J. Uhlir	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) 4-7 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4,5,6 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-3 in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 4-7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

3. The examiner would like to thank the applicant for pointing out the overlapping claim in the previously issued restriction requirement. The examiner would further like to thank the applicant for correctly placing the overlapping claim with the correct claim group and electing accordingly.

Specification

4. The abstract of the disclosure is objected to because it is more than one paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (JP10258486) in view of Kawata et al (US5662962).

7. The limitations "obtained by compressing," "formed by application," "impregnated... after compression," and "formed by applying a dispersion liquid" present in claims 1 and 2 are product-by-process limitations and do not appear to be further limiting in so far as the structure of the product is concerned. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP § 2113.

For the purpose of this examination, the examiner has relied upon an official translation of the Kimura document. This translation has been attached, and the applicant should note that all references related to Kimura refer to this translation.

8. Kimura teaches a transparent conductive film that is comprised of a thin layer of Indium Tin Oxide (ITO) containing ink composition that has been formed onto a transparent resin film support (Page 3, section 0004). The transparent film support is typically polyethylene terephthalate (PET). The ITO ink composition is composed of 10-30% by weight of ITO micro-powder, 1-6% by weight resin, and 64-89% by weight solvent. The resin material is typically an acrylic or polyester resin (page 5, section 0007). Although Kimura does not specifically teach a volume percentage for the resin

and ITO components, the examiner takes the position that the volume percentage limitation in claim 1 is necessarily met. It is well known that the density of high purity ITO is ~7g/cm^3 or higher. If the minimum amount of resin (1 part) and maximum amount of ITO (30 parts) specified by Kimura is used, the volume percentage requirement present in claim 1 will be met even if the resin is assumed to have a density as low as .1g/cm^3. The following calculation was performed.

$$Vol\%_{(resin)} = Vol_{(resin)} / (Vol_{(ITO)} + Vol_{(Resin)}) * 100\%$$

If the density of the resin is assumed to be 1g/cm^3, the $Vol\%_{(resin)}$ is calculated to be 18.94%. Further, if the density of the resin is assumed to be .5g/cm^3, the $Vol\%_{(resin)}$ is 31.8%. Still further, if the density of the resin is assumed to be .25g/cm^3, the $Vol\%_{(resin)}$ is calculated to be 48.3%. Lastly, even if the density of the resin is as low as .1g/cm^3, the volume percent of resin is calculated to be 70.0%, and thus still meets the limitation of claim one. All values remain the same when the calculation is adjusted to represent 100 parts by weight ITO. Kimura teaches that the ITO ink is deposited on the PET substrate via gravure printing, and is dried with hot air at a temperature between 80-120^0 C (page 6 section 0008). The film is then calendered at a temperature between 80-130^0 C. This calendaring process applies pressure to the porous ITO film, and increases transparency while simultaneously reducing the surface resistance of the film (page 6-7, section 0009).

9. Kimura does not teach impregnating the ITO film with a transparent substance.

10. Kawata et al teaches a transparent electro-conductive substrate that is comprised of a transparent support, a transparent electro-conductive film formed on the

surface of the support, and an overcoat film formed on the transparent electro-conductive film. The transparent electro-conductive film is typically comprised of ultrafine ITO particles dispersed in a binder. The overcoat film is typically a silica or silica sol (Column 1, line 60-column 2, line 34). The transparent electro-conductive film formed is porous and these gaps serve to scattered light and reduce adhesion to a substrate (column 3, line 65-column 4, line 5). The overcoat layer provided penetrates between these gaps increases the optical, conductive, and strength properties of the film (column 4, lines 18-30 and column 4 line 66-column 5 line 3).

11. Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to coat the porous ITO layer taught by Kimura with the silica or silica sol material taught by Kawata et al.

12. One would have been motivated to make this modification due to the better optical, conductive, and strength properties of the film that one would expect to gain as a result.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhlir whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.

nju
April 15, 2002

Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700